

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 3, Czech Hydrometeorological Institute, Praha (Czech Republic)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.221	5	5.046	0.652	0.269	S
H2		6.262	6	5.992	0.547	0.494	S
H3		0.329	0.3	0.39	0.232	-0.264	S
H4		0.949	0.9	0.939	0.088	0.109	S
H1	Cd	0.64	0.6	0.601	0.052	0.747	S
H2		0.599	0.55	0.551	0.043	1.103	S
H3		0.091	0.08	0.086	0.02	0.258	S
H4		0.062	0.06	0.061	0.01	0.123	S
H1	Cr	4.709	5	4.969	0.28	-0.93	S
H2		7.959	8.4	8.379	0.627	-0.669	S
H3		0.787	0.85	0.818	0.124	-0.249	S
H4		0.763	0.8	0.814	0.059	-0.873	S
H1	Cu	7.523	7.5	7.42	1.007	0.102	S
H2		7.05	7	6.896	0.488	0.316	S
H3		0.904	0.9	0.889	0.148	0.102	S
H4		0.9	0.9	0.886	0.13	0.111	S
H1	Ni	7.893	8	7.841	0.404	0.127	S
H2		10.46	10.4	10.364	0.631	0.153	S
H3		0.501	0.5	0.592	0.175	-0.523	S
H4		1.188	1.2	1.175	0.137	0.094	S
H1	Pb	22.16	23	22.494	1.219	-0.274	S
H2		22.695	23.5	23.18	1.916	-0.253	S
H3		1.093	1.1	1.173	0.353	-0.225	S
H4		0.962	1	0.999	0.169	-0.22	S
H1	Zn	132.05	110	112.65	7.215	2.689	Q
H2		138.95	115	117.897	7.706	2.732	Q
H3		10.207	8	8.697	1.972	0.765	Q
H4		11.655	9.5	10.391	1.482	0.853	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 4, Aarhus University, Department of Environmental Science (Denmark)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.8	5	5.046	0.652	-0.377	S
H2		5.7	6	5.992	0.547	-0.534	S
H3		< 1.500	0.3	0.39	0.232		B
H4		< 1.500	0.9	0.939	0.088		B
H1	Cd	0.55	0.6	0.601	0.052	-0.984	S
H2		0.53	0.55	0.551	0.043	-0.476	S
H3		< 0.350	0.08	0.086	0.02		B
H4		< 0.350	0.06	0.061	0.01		B
H1	Cr	4.8	5	4.969	0.28	-0.604	S
H2		9	8.4	8.379	0.627	0.99	S
H3		< 2.000	0.85	0.818	0.124		B
H4		< 2.000	0.8	0.814	0.059		B
H1	Cu	7.2	7.5	7.42	1.007	-0.218	S
H2		6.8	7	6.896	0.488	-0.196	S
H3		< 2.500	0.9	0.889	0.148		B
H4		< 2.500	0.9	0.886	0.13		B
H1	Ni	7.2	8	7.841	0.404	-1.588	S
H2		9.8	10.4	10.364	0.631	-0.894	S
H3		< 3.000	0.5	0.592	0.175		B
H4		< 3.000	1.2	1.175	0.137		B
H1	Pb	21.1	23	22.494	1.219	-1.143	S
H2		21.6	23.5	23.18	1.916	-0.824	S
H3		< 3.000	1.1	1.173	0.353		B
H4		< 3.000	1	0.999	0.169		B
H1	Zn	-999	110	112.65	7.215		B
H2		-999	115	117.897	7.706		B
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 5, Finnish Meteorological Institute. Air Quality Department (Finland)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.014	5	5.046	0.652	-0.049	S
H2		6.024	6	5.992	0.547	0.059	S
H3		0.295	0.3	0.39	0.232	-0.41	S
H4		0.907	0.9	0.939	0.088	-0.367	S
H1	Cd	0.613	0.6	0.601	0.052	0.228	S
H2		0.563	0.55	0.551	0.043	0.285	S
H3		0.083	0.08	0.086	0.02	-0.14	S
H4		0.062	0.06	0.061	0.01	0.123	S
H1	Cr	4.875	5	4.969	0.28	-0.336	S
H2		8.208	8.4	8.379	0.627	-0.272	S
H3		0.835	0.85	0.818	0.124	0.133	S
H4		0.792	0.8	0.814	0.059	-0.378	S
H1	Cu	7.416	7.5	7.42	1.007	-0.004	S
H2		6.955	7	6.896	0.488	0.122	S
H3		0.907	0.9	0.889	0.148	0.119	S
H4		0.913	0.9	0.886	0.13	0.207	S
H1	Ni	7.86	8	7.841	0.404	0.046	S
H2		10.415	10.4	10.364	0.631	0.082	S
H3		0.514	0.5	0.592	0.175	-0.448	S
H4		1.196	1.2	1.175	0.137	0.153	S
H1	Pb	23.547	23	22.494	1.219	0.864	S
H2		24.047	23.5	23.18	1.916	0.453	S
H3		1.171	1.1	1.173	0.353	-0.005	S
H4		1.054	1	0.999	0.169	0.323	S
H1	Zn	110.81	110	112.65	7.215	-0.255	S
H2		115.99	115	117.897	7.706	-0.248	S
H3		8.72	8	8.697	1.972	0.012	S
H4		9.94	9.5	10.391	1.482	-0.304	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 6, SGS Multilab (France)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.51	5	5.046	0.652	0.712	S
H2		6.21	6	5.992	0.547	0.399	S
H3		0.31	0.3	0.39	0.232	-0.346	S
H4		0.93	0.9	0.939	0.088	-0.107	S
H1	Cd	0.64	0.6	0.601	0.052	0.747	S
H2		0.61	0.55	0.551	0.043	1.368	S
H3		0.1	0.08	0.086	0.02	0.706	Q
H4		0.066	0.06	0.061	0.01	0.507	S
H1	Cr	4.88	5	4.969	0.28	-0.318	S
H2		7.97	8.4	8.379	0.627	-0.652	S
H3		0.72	0.85	0.818	0.124	-0.793	S
H4		0.73	0.8	0.814	0.059	-1.436	S
H1	Cu	7.77	7.5	7.42	1.007	0.348	S
H2		6.73	7	6.896	0.488	-0.339	S
H3		0.9	0.9	0.889	0.148	0.072	S
H4		0.76	0.9	0.886	0.13	-0.97	S
H1	Ni	7.46	8	7.841	0.404	-0.944	S
H2		9.61	10.4	10.364	0.631	-1.195	S
H3		0.44	0.5	0.592	0.175	-0.871	S
H4		1.06	1.2	1.175	0.137	-0.841	S
H1	Pb	22.93	23	22.494	1.219	0.358	S
H2		23.04	23.5	23.18	1.916	-0.073	S
H3		1.23	1.1	1.173	0.353	0.162	S
H4		1.04	1	0.999	0.169	0.24	S
H1	Zn	122.9	110	112.65	7.215	1.421	S
H2		127.5	115	117.897	7.706	1.246	S
H3		11.36	8	8.697	1.972	1.35	Q
H4		12.57	9.5	10.391	1.482	1.47	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 8, Umweltbundesamt, Langen (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.27	5	5.046	0.652	0.344	S
H2		6.19	6	5.992	0.547	0.363	S
H3		0.314	0.3	0.39	0.232	-0.329	S
H4		0.942	0.9	0.939	0.088	0.029	S
H1	Cd	0.645	0.6	0.601	0.052	0.843	S
H2		0.584	0.55	0.551	0.043	0.769	S
H3		0.087	0.08	0.086	0.02	0.059	S
H4		0.065	0.06	0.061	0.01	0.411	S
H1	Cr	5.04	5	4.969	0.28	0.255	S
H2		8.54	8.4	8.379	0.627	0.257	S
H3		0.89	0.85	0.818	0.124	0.576	S
H4		0.83	0.8	0.814	0.059	0.271	S
H1	Cu	7.87	7.5	7.42	1.007	0.447	S
H2		7.31	7	6.896	0.488	0.85	S
H3		0.964	0.9	0.889	0.148	0.504	S
H4		0.956	0.9	0.886	0.13	0.538	S
H1	Ni	8.24	8	7.841	0.404	0.987	S
H2		10.9	10.4	10.364	0.631	0.851	S
H3		0.54	0.5	0.592	0.175	-0.3	S
H4		1.26	1.2	1.175	0.137	0.62	S
H1	Pb	24.1	23	22.494	1.219	1.317	S
H2		24.6	23.5	23.18	1.916	0.741	S
H3		1.23	1.1	1.173	0.353	0.162	S
H4		1.15	1	0.999	0.169	0.89	S
H1	Zn	118	110	112.65	7.215	0.742	S
H2		120	115	117.897	7.706	0.273	S
H3		9.52	8	8.697	1.972	0.417	S
H4		11.3	9.5	10.391	1.482	0.613	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 10, Institute for Atmospheric Physics (Hungary)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.543	0.6	0.601	0.052	-1.119	S
H2		0.494	0.55	0.551	0.043	-1.306	S
H3		0.063	0.08	0.086	0.02	-1.134	S
H4		0.042	0.06	0.061	0.01	-1.798	Q
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	-999	7.5	7.42	1.007		B
H2		-999	7	6.896	0.488		B
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	19.22	23	22.494	1.219	-2.685	Q
H2		19.079	23.5	23.18	1.916	-2.14	Q
H3		0.929	1.1	1.173	0.353	-0.691	S
H4		0.815	1	0.999	0.169	-1.088	S
H1	Zn	-999	110	112.65	7.215		B
H2		-999	115	117.897	7.706		B
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 13, C.N.R. Istituto Inquinamento Atmosferico (Italy)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.82	5	5.046	0.652	-0.346	S
H2		5.68	6	5.992	0.547	-0.571	S
H3		0.275	0.3	0.39	0.232	-0.497	S
H4		0.843	0.9	0.939	0.088	-1.091	S
H1	Cd	0.587	0.6	0.601	0.052	-0.273	S
H2		0.536	0.55	0.551	0.043	-0.338	S
H3		0.077	0.08	0.086	0.02	-0.438	S
H4		0.062	0.06	0.061	0.01	0.123	S
H1	Cr	4.67	5	4.969	0.28	-1.069	S
H2		7.86	8.4	8.379	0.627	-0.827	S
H3		0.819	0.85	0.818	0.124	0.004	S
H4		0.753	0.8	0.814	0.059	-1.044	S
H1	Cu	6.95	7.5	7.42	1.007	-0.467	S
H2		6.42	7	6.896	0.488	-0.975	S
H3		0.883	0.9	0.889	0.148	-0.043	S
H4		0.823	0.9	0.886	0.13	-0.485	S
H1	Ni	7.47	8	7.841	0.404	-0.92	S
H2		9.81	10.4	10.364	0.631	-0.878	S
H3		0.468	0.5	0.592	0.175	-0.711	S
H4		1.11	1.2	1.175	0.137	-0.476	S
H1	Pb	22.4	23	22.494	1.219	-0.077	S
H2		22.7	23.5	23.18	1.916	-0.25	S
H3		1.09	1.1	1.173	0.353	-0.234	S
H4		0.956	1	0.999	0.169	-0.256	S
H1	Zn	117	110	112.65	7.215	0.603	S
H2		125	115	117.897	7.706	0.922	S
H3		8.18	8	8.697	1.972	-0.262	S
H4		9.37	9.5	10.391	1.482	-0.689	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 15, Norwegian Institute for Air Research NILU (Norway)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.02	5	5.046	0.652	-0.039	S
H2		6.01	6	5.992	0.547	0.033	S
H3		0.3	0.3	0.39	0.232	-0.389	S
H4		0.9	0.9	0.939	0.088	-0.446	S
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.53	0.55	0.551	0.043	-0.476	S
H3		0.08	0.08	0.086	0.02	-0.289	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5	5	4.969	0.28	0.111	S
H2		8.4	8.4	8.379	0.627	0.034	S
H3		0.85	0.85	0.818	0.124	0.254	S
H4		0.8	0.8	0.814	0.059	-0.241	S
H1	Cu	7.4	7.5	7.42	1.007	-0.02	S
H2		6.9	7	6.896	0.488	0.009	S
H3		0.9	0.9	0.889	0.148	0.072	S
H4		0.88	0.9	0.886	0.13	-0.047	S
H1	Ni	8.1	8	7.841	0.404	0.64	S
H2		10.5	10.4	10.364	0.631	0.216	S
H3		0.5	0.5	0.592	0.175	-0.528	S
H4		1.2	1.2	1.175	0.137	0.182	S
H1	Pb	22.8	23	22.494	1.219	0.251	S
H2		23.5	23.5	23.18	1.916	0.167	S
H3		1.2	1.1	1.173	0.353	0.077	S
H4		1	1	0.999	0.169	0.004	S
H1	Zn	108	110	112.65	7.215	-0.644	S
H2		115	115	117.897	7.706	-0.376	S
H3		8.8	8	8.697	1.972	0.052	S
H4		10	9.5	10.391	1.482	-0.264	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 16, Institute of Meteorology and Water Management, Warsaw (Poland)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.55	0.55	0.551	0.043	-0.015	S
H3		0.08	0.08	0.086	0.02	-0.289	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5	5	4.969	0.28	0.111	S
H2		8.5	8.4	8.379	0.627	0.193	S
H3		0.85	0.85	0.818	0.124	0.254	S
H4		0.8	0.8	0.814	0.059	-0.241	S
H1	Cu	10	7.5	7.42	1.007	2.563	U
H2		7	7	6.896	0.488	0.214	S
H3		1	0.9	0.889	0.148	0.747	S
H4		0.9	0.9	0.886	0.13	0.107	S
H1	Ni	7.5	8	7.841	0.404	-0.845	S
H2		10.5	10.4	10.364	0.631	0.216	S
H3		0.5	0.5	0.592	0.175	-0.528	S
H4		1.1	1.2	1.175	0.137	-0.549	S
H1	Pb	23	23	22.494	1.219	0.415	S
H2		23.5	23.5	23.18	1.916	0.167	S
H3		1.1	1.1	1.173	0.353	-0.206	S
H4		1	1	0.999	0.169	0.004	S
H1	Zn	110	110	112.65	7.215	-0.367	S
H2		115	115	117.897	7.706	-0.376	S
H3		8.5	8	8.697	1.972	-0.1	S
H4		9	9.5	10.391	1.482	-0.939	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 20, Swedish Environmental Research Institute IVL, Gothenburg (Sweden)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.23	5	5.046	0.652	0.282	S
H2		6.13	6	5.992	0.547	0.253	S
H3		0.31	0.3	0.39	0.232	-0.346	S
H4		0.897	0.9	0.939	0.088	-0.48	S
H1	Cd	0.634	0.6	0.601	0.052	0.632	S
H2		0.578	0.55	0.551	0.043	0.63	S
H3		0.086	0.08	0.086	0.02	0.009	S
H4		0.063	0.06	0.061	0.01	0.219	S
H1	Cr	4.83	5	4.969	0.28	-0.497	S
H2		8.12	8.4	8.379	0.627	-0.413	S
H3		0.825	0.85	0.818	0.124	0.052	S
H4		0.735	0.8	0.814	0.059	-1.351	S
H1	Cu	7.43	7.5	7.42	1.007	0.01	S
H2		6.88	7	6.896	0.488	-0.032	S
H3		0.898	0.9	0.889	0.148	0.059	S
H4		0.88	0.9	0.886	0.13	-0.047	S
H1	Ni	7.8	8	7.841	0.404	-0.103	S
H2		10.23	10.4	10.364	0.631	-0.212	S
H3		0.498	0.5	0.592	0.175	-0.54	S
H4		1.15	1.2	1.175	0.137	-0.184	S
H1	Pb	21.8	23	22.494	1.219	-0.569	S
H2		22.1	23.5	23.18	1.916	-0.563	S
H3		1.17	1.1	1.173	0.353	-0.008	S
H4		0.97	1	0.999	0.169	-0.173	S
H1	Zn	122	110	112.65	7.215	1.296	S
H2		125.4	115	117.897	7.706	0.974	S
H3		11.9	8	8.697	1.972	1.624	Q
H4		11.5	9.5	10.391	1.482	0.748	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 31, Slovak Hydrometeorological Institute (Slovakia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.96	5	5.046	0.652	-0.131	S
H2		5.98	6	5.992	0.547	-0.022	S
H3		0.31	0.3	0.39	0.232	-0.346	S
H4		0.9	0.9	0.939	0.088	-0.446	S
H1	Cd	0.55	0.6	0.601	0.052	-0.984	S
H2		0.521	0.55	0.551	0.043	-0.683	S
H3		0.08	0.08	0.086	0.02	-0.289	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5.05	5	4.969	0.28	0.29	S
H2		8.47	8.4	8.379	0.627	0.145	S
H3		0.91	0.85	0.818	0.124	0.737	S
H4		0.84	0.8	0.814	0.059	0.442	S
H1	Cu	6.97	7.5	7.42	1.007	-0.447	S
H2		6.51	7	6.896	0.488	-0.791	S
H3		0.87	0.9	0.889	0.148	-0.13	S
H4		0.83	0.9	0.886	0.13	-0.431	S
H1	Ni	7.73	8	7.841	0.404	-0.276	S
H2		10.38	10.4	10.364	0.631	0.026	S
H3		0.84	0.5	0.592	0.175	1.414	U
H4		1.33	1.2	1.175	0.137	1.132	S
H1	Pb	21.7	23	22.494	1.219	-0.651	S
H2		22.1	23.5	23.18	1.916	-0.563	S
H3		1.12	1.1	1.173	0.353	-0.149	S
H4		1	1	0.999	0.169	0.004	S
H1	Zn	106.7	110	112.65	7.215	-0.825	S
H2		110.9	115	117.897	7.706	-0.908	S
H3		8.5	8	8.697	1.972	-0.1	S
H4		9.5	9.5	10.391	1.482	-0.601	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 32, Atmospheric Pollution Research Laboratory, Institute of Physics, Vilnius (Lithuania)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.5	5	5.046	0.652	0.696	S
H2		6.8	6	5.992	0.547	1.479	S
H3		0.4	0.3	0.39	0.232	0.042	Q
H4		0.9	0.9	0.939	0.088	-0.446	S
H1	Cd	0.69	0.6	0.601	0.052	1.709	S
H2		0.59	0.55	0.551	0.043	0.907	S
H3		0.07	0.08	0.086	0.02	-0.786	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5.3	5	4.969	0.28	1.185	S
H2		9.5	8.4	8.379	0.627	1.787	S
H3		1	0.85	0.818	0.124	1.461	S
H4		0.9	0.8	0.814	0.059	1.466	S
H1	Cu	8.2	7.5	7.42	1.007	0.775	S
H2		7.9	7	6.896	0.488	2.059	S
H3		1	0.9	0.889	0.148	0.747	S
H4		1	0.9	0.886	0.13	0.876	S
H1	Ni	11.7	8	7.841	0.404	9.555	U
H2		15.8	10.4	10.364	0.631	8.621	U
H3		1	0.5	0.592	0.175	2.328	U
H4		2.3	1.2	1.175	0.137	8.22	U
H1	Pb	23.2	23	22.494	1.219	0.579	S
H2		24.5	23.5	23.18	1.916	0.689	S
H3		1.2	1.1	1.173	0.353	0.077	S
H4		1.1	1	0.999	0.169	0.595	S
H1	Zn	118	110	112.65	7.215	0.742	S
H2		130	115	117.897	7.706	1.571	S
H3		9	8	8.697	1.972	0.154	S
H4		11	9.5	10.391	1.482	0.411	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 33, Environmental Pollution Observ. Centre (Latvia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.5	5	5.046	0.652	0.696	S
H2		7	6	5.992	0.547	1.845	Q
H3		0.5	0.3	0.39	0.232	0.473	U
H4		1.1	0.9	0.939	0.088	1.817	S
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.55	0.55	0.551	0.043	-0.015	S
H3		0.07	0.08	0.086	0.02	-0.786	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5	5	4.969	0.28	0.111	S
H2		8.5	8.4	8.379	0.627	0.193	S
H3		0.85	0.85	0.818	0.124	0.254	S
H4		0.8	0.8	0.814	0.059	-0.241	S
H1	Cu	7.5	7.5	7.42	1.007	0.08	S
H2		7	7	6.896	0.488	0.214	S
H3		0.7	0.9	0.889	0.148	-1.278	S
H4		1	0.9	0.886	0.13	0.876	S
H1	Ni	8	8	7.841	0.404	0.393	S
H2		11	10.4	10.364	0.631	1.009	S
H3		0.9	0.5	0.592	0.175	1.757	U
H4		1.1	1.2	1.175	0.137	-0.549	S
H1	Pb	30	23	22.494	1.219	6.156	U
H2		26	23.5	23.18	1.916	1.472	S
H3		1.3	1.1	1.173	0.353	0.361	S
H4		1	1	0.999	0.169	0.004	S
H1	Zn	100	110	112.65	7.215	-1.753	S
H2		115	115	117.897	7.706	-0.376	S
H3		8.5	8	8.697	1.972	-0.1	S
H4		10	9.5	10.391	1.482	-0.264	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 34, Ministry of Environment and Urbanisation (Turkey)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.977	5	5.046	0.652	-0.105	S
H2		5.919	6	5.992	0.547	-0.133	S
H3		0.344	0.3	0.39	0.232	-0.199	S
H4		0.917	0.9	0.939	0.088	-0.254	S
H1	Cd	0.657	0.6	0.601	0.052	1.074	S
H2		0.606	0.55	0.551	0.043	1.276	S
H3		0.094	0.08	0.086	0.02	0.407	S
H4		0.069	0.06	0.061	0.01	0.795	S
H1	Cr	5.354	5	4.969	0.28	1.378	S
H2		9.034	8.4	8.379	0.627	1.044	S
H3		0.901	0.85	0.818	0.124	0.664	S
H4		0.829	0.8	0.814	0.059	0.254	S
H1	Cu	7.645	7.5	7.42	1.007	0.224	S
H2		7.105	7	6.896	0.488	0.429	S
H3		0.532	0.9	0.889	0.148	-2.412	Q
H4		0.487	0.9	0.886	0.13	-3.069	Q
H1	Ni	8.761	8	7.841	0.404	2.277	S
H2		11.319	10.4	10.364	0.631	1.515	S
H3		0.749	0.5	0.592	0.175	0.894	Q
H4		1.265	1.2	1.175	0.137	0.657	S
H1	Pb	22.709	23	22.494	1.219	0.176	S
H2		22.933	23.5	23.18	1.916	-0.129	S
H3		0.747	1.1	1.173	0.353	-1.207	Q
H4		0.578	1	0.999	0.169	-2.488	Q
H1	Zn	106.785	110	112.65	7.215	-0.813	S
H2		113.214	115	117.897	7.706	-0.608	S
H3		2.65	8	8.697	1.972	-3.066	U
H4		4.452	9.5	10.391	1.482	-4.007	U

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 38, Estonian Environmental Research Centre, Tallinn (Estonia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	4.81	5	5.046	0.652	-0.361	S
H2		5.91	6	5.992	0.547	-0.15	S
H3		0.34	0.3	0.39	0.232	-0.217	S
H4		0.86	0.9	0.939	0.088	-0.899	S
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.56	0.55	0.551	0.043	0.216	S
H3		0.07	0.08	0.086	0.02	-0.786	S
H4		0.04	0.06	0.061	0.01	-1.99	Q
H1	Cr	4.46	5	4.969	0.28	-1.821	S
H2		7.98	8.4	8.379	0.627	-0.636	S
H3		0.58	0.85	0.818	0.124	-1.92	Q
H4		0.53	0.8	0.814	0.059	-4.851	Q
H1	Cu	8.57	7.5	7.42	1.007	1.142	S
H2		6.58	7	6.896	0.488	-0.647	S
H3		< 1.000	0.9	0.889	0.148		B
H4		< 1.000	0.9	0.886	0.13		B
H1	Ni	7.49	8	7.841	0.404	-0.87	S
H2		9.46	10.4	10.364	0.631	-1.433	S
H3		0.41	0.5	0.592	0.175	-1.043	S
H4		1.04	1.2	1.175	0.137	-0.987	S
H1	Pb	21.3	23	22.494	1.219	-0.979	S
H2		24.4	23.5	23.18	1.916	0.637	S
H3		0.94	1.1	1.173	0.353	-0.66	S
H4		0.83	1	0.999	0.169	-1	S
H1	Zn	106	110	112.65	7.215	-0.922	S
H2		111	115	117.897	7.706	-0.895	S
H3		7.19	8	8.697	1.972	-0.764	S
H4		9.48	9.5	10.391	1.482	-0.615	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 39, Environmental Monitoring Laboratory, Institute of Environmental Protection (Poland)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5	5	5.046	0.652	-0.07	S
H2		6	6	5.992	0.547	0.015	S
H3		0.3	0.3	0.39	0.232	-0.389	S
H4		1	0.9	0.939	0.088	0.686	S
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.55	0.55	0.551	0.043	-0.015	S
H3		0.06	0.08	0.086	0.02	-1.283	Q
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5	5	4.969	0.28	0.111	S
H2		8.5	8.4	8.379	0.627	0.193	S
H3		0.9	0.85	0.818	0.124	0.656	S
H4		0.8	0.8	0.814	0.059	-0.241	S
H1	Cu	7	7.5	7.42	1.007	-0.417	S
H2		6.5	7	6.896	0.488	-0.811	S
H3		0.9	0.9	0.889	0.148	0.072	S
H4		1	0.9	0.886	0.13	0.876	S
H1	Ni	8	8	7.841	0.404	0.393	S
H2		11	10.4	10.364	0.631	1.009	S
H3		0.6	0.5	0.592	0.175	0.043	S
H4		0.8	1.2	1.175	0.137	-2.741	U
H1	Pb	23	23	22.494	1.219	0.415	S
H2		24	23.5	23.18	1.916	0.428	S
H3		1.1	1.1	1.173	0.353	-0.206	S
H4		1	1	0.999	0.169	0.004	S
H1	Zn	110	110	112.65	7.215	-0.367	S
H2		115	115	117.897	7.706	-0.376	S
H3		8	8	8.697	1.972	-0.353	S
H4		10	9.5	10.391	1.482	-0.264	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 48, Afdeling Rapportering Water Labovestiging Gent, VMM (Belgium)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.815	5	5.046	0.652	-0.354	S
H2		5.927	6	5.992	0.547	-0.119	S
H3		0.162	0.3	0.39	0.232	-0.982	Q
H4		0.768	0.9	0.939	0.088	-1.939	S
H1	Cd	0.583	0.6	0.601	0.052	-0.359	S
H2		0.552	0.55	0.551	0.043	0.031	S
H3		< 0.110	0.08	0.086	0.02		B
H4		< 0.110	0.06	0.061	0.01		B
H1	Cr	4.907	5	4.969	0.28	-0.221	S
H2		8.477	8.4	8.379	0.627	0.156	S
H3		0.825	0.85	0.818	0.124	0.052	S
H4		0.781	0.8	0.814	0.059	-0.569	S
H1	Cu	6.64	7.5	7.42	1.007	-0.775	S
H2		6.356	7	6.896	0.488	-1.106	S
H3		< 1.730	0.9	0.889	0.148		B
H4		< 1.730	0.9	0.886	0.13		B
H1	Ni	7.777	8	7.841	0.404	-0.159	S
H2		10.588	10.4	10.364	0.631	0.356	S
H3		0.317	0.5	0.592	0.175	-1.574	Q
H4		1.014	1.2	1.175	0.137	-1.177	Q
H1	Pb	22.32	23	22.494	1.219	-0.143	S
H2		22.38	23.5	23.18	1.916	-0.417	S
H3		0.932	1.1	1.173	0.353	-0.682	S
H4		0.871	1	0.999	0.169	-0.76	S
H1	Zn	109.01	110	112.65	7.215	-0.504	S
H2		116.6	115	117.897	7.706	-0.168	S
H3		10.78	8	8.697	1.972	1.056	Q
H4		12.64	9.5	10.391	1.482	1.517	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 110, Th ringer Landesanstalt f. Landwirtschaft TTL, Jena (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.93	5	5.046	0.652	-0.177	S
H2		6.01	6	5.992	0.547	0.033	S
H3		0.36	0.3	0.39	0.232	-0.13	S
H4		1	0.9	0.939	0.088	0.686	S
H1	Cd	0.63	0.6	0.601	0.052	0.555	S
H2		0.6	0.55	0.551	0.043	1.137	S
H3		0.14	0.08	0.086	0.02	2.694	U
H4		0.12	0.06	0.061	0.01	5.693	U
H1	Cr	4.77	5	4.969	0.28	-0.711	S
H2		8.46	8.4	8.379	0.627	0.129	S
H3		0.91	0.85	0.818	0.124	0.737	S
H4		0.85	0.8	0.814	0.059	0.613	S
H1	Cu	18.2	7.5	7.42	1.007	10.707	U
H2		6.98	7	6.896	0.488	0.173	S
H3		1.03	0.9	0.889	0.148	0.95	S
H4		1.08	0.9	0.886	0.13	1.491	S
H1	Ni	7.78	8	7.841	0.404	-0.152	S
H2		10.6	10.4	10.364	0.631	0.375	S
H3		0.6	0.5	0.592	0.175	0.043	S
H4		1.25	1.2	1.175	0.137	0.547	S
H1	Pb	23.6	23	22.494	1.219	0.907	S
H2		23.1	23.5	23.18	1.916	-0.042	S
H3		1.15	1.1	1.173	0.353	-0.064	S
H4		1.1	1	0.999	0.169	0.595	S
H1	Zn	123	110	112.65	7.215	1.435	S
H2		120	115	117.897	7.706	0.273	S
H3		4.74	8	8.697	1.972	-2.006	Q
H4		6.16	9.5	10.391	1.482	-2.855	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 112, Niedersächsische Forstliche Versuchsanstalt NVF (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.58	0.6	0.601	0.052	-0.407	S
H2		0.53	0.55	0.551	0.043	-0.476	S
H3		0.07	0.08	0.086	0.02	-0.786	S
H4		0.05	0.06	0.061	0.01	-1.03	S
H1	Cr	5.17	5	4.969	0.28	0.72	S
H2		8.65	8.4	8.379	0.627	0.432	S
H3		0.87	0.85	0.818	0.124	0.415	S
H4		0.83	0.8	0.814	0.059	0.271	S
H1	Cu	7.48	7.5	7.42	1.007	0.06	S
H2		6.77	7	6.896	0.488	-0.257	S
H3		0.91	0.9	0.889	0.148	0.14	S
H4		0.93	0.9	0.886	0.13	0.338	S
H1	Ni	8.35	8	7.841	0.404	1.259	S
H2		10.85	10.4	10.364	0.631	0.771	S
H3		0.51	0.5	0.592	0.175	-0.471	S
H4		1.14	1.2	1.175	0.137	-0.257	S
H1	Pb	21.89	23	22.494	1.219	-0.495	S
H2		22.28	23.5	23.18	1.916	-0.469	S
H3		1.06	1.1	1.173	0.353	-0.32	S
H4		0.87	1	0.999	0.169	-0.764	S
H1	Zn	112.3	110	112.65	7.215	-0.048	S
H2		116.3	115	117.897	7.706	-0.207	S
H3		8.93	8	8.697	1.972	0.118	S
H4		10.13	9.5	10.391	1.482	-0.176	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 113, Fachhochschule Eberswalde (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	4.655	5	5.046	0.652	-0.599	S
H2		6.15	6	5.992	0.547	0.289	S
H3		< 4.000	0.3	0.39	0.232		B
H4		< 4.000	0.9	0.939	0.088		B
H1	Cd	0.626	0.6	0.601	0.052	0.478	S
H2		0.601	0.55	0.551	0.043	1.161	S
H3		0.104	0.08	0.086	0.02	0.929	Q
H4		0.079	0.06	0.061	0.01	1.707	Q
H1	Cr	5.175	5	4.969	0.28	0.738	S
H2		9.095	8.4	8.379	0.627	1.142	S
H3		0.67	0.85	0.818	0.124	-1.195	S
H4		0.962	0.8	0.814	0.059	2.525	S
H1	Cu	9.055	7.5	7.42	1.007	1.624	Q
H2		6.615	7	6.896	0.488	-0.575	S
H3		< 4.000	0.9	0.889	0.148		B
H4		< 4.000	0.9	0.886	0.13		B
H1	Ni	8.06	8	7.841	0.404	0.541	S
H2		10.75	10.4	10.364	0.631	0.613	S
H3		< 2.000	0.5	0.592	0.175		B
H4		< 2.000	1.2	1.175	0.137		B
H1	Pb	24.65	23	22.494	1.219	1.768	S
H2		27.75	23.5	23.18	1.916	2.385	Q
H3		1.11	1.1	1.173	0.353	-0.178	S
H4		1.14	1	0.999	0.169	0.831	S
H1	Zn	112.5	110	112.65	7.215	-0.021	S
H2		114	115	117.897	7.706	-0.506	S
H3		9.405	8	8.697	1.972	0.359	S
H4		12.1	9.5	10.391	1.482	1.153	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 114, C.N.R. Istituto Italiano di Idrobiologia (Italy)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.4	5	5.046	0.652	0.543	S
H2		4.9	6	5.992	0.547	-1.998	Q
H3		1.4	0.3	0.39	0.232	4.351	U
H4		< 1.000	0.9	0.939	0.088		B
H1	Cd	0.5	0.6	0.601	0.052	-1.946	Q
H2		0.5	0.55	0.551	0.043	-1.167	S
H3		0.1	0.08	0.086	0.02	0.706	Q
H4		< 0.100	0.06	0.061	0.01		B
H1	Cr	4.3	5	4.969	0.28	-2.393	S
H2		7.3	8.4	8.379	0.627	-1.72	S
H3		0.5	0.85	0.818	0.124	-2.564	Q
H4		0.6	0.8	0.814	0.059	-3.656	Q
H1	Cu	8	7.5	7.42	1.007	0.576	S
H2		7.5	7	6.896	0.488	1.239	S
H3		0.8	0.9	0.889	0.148	-0.603	S
H4		0.7	0.9	0.886	0.13	-1.431	S
H1	Ni	7	8	7.841	0.404	-2.084	S
H2		9.3	10.4	10.364	0.631	-1.687	S
H3		0.4	0.5	0.592	0.175	-1.1	S
H4		0.8	1.2	1.175	0.137	-2.741	U
H1	Pb	25.4	23	22.494	1.219	2.383	S
H2		25	23.5	23.18	1.916	0.95	S
H3		0.7	1.1	1.173	0.353	-1.34	Q
H4		0.7	1	0.999	0.169	-1.767	Q
H1	Zn	118	110	112.65	7.215	0.742	S
H2		120	115	117.897	7.706	0.273	S
H3		5.3	8	8.697	1.972	-1.722	Q
H4		6.6	9.5	10.391	1.482	-2.558	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 115, Bayerische Landesanstalt f. Wald- und Forstwirtschaft (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.69	5	5.046	0.652	0.987	S
H2		6.73	6	5.992	0.547	1.351	S
H3		0.34	0.3	0.39	0.232	-0.217	S
H4		1.025	0.9	0.939	0.088	0.969	S
H1	Cd	0.608	0.6	0.601	0.052	0.131	S
H2		0.57	0.55	0.551	0.043	0.446	S
H3		0.083	0.08	0.086	0.02	-0.14	S
H4		0.061	0.06	0.061	0.01	0.026	S
H1	Cr	5.04	5	4.969	0.28	0.255	S
H2		8.49	8.4	8.379	0.627	0.177	S
H3		0.866	0.85	0.818	0.124	0.382	S
H4		0.81	0.8	0.814	0.059	-0.07	S
H1	Cu	7.69	7.5	7.42	1.007	0.268	S
H2		7.21	7	6.896	0.488	0.645	S
H3		0.923	0.9	0.889	0.148	0.227	S
H4		0.91	0.9	0.886	0.13	0.184	S
H1	Ni	8.25	8	7.841	0.404	1.012	S
H2		10.96	10.4	10.364	0.631	0.946	S
H3		0.68	0.5	0.592	0.175	0.5	Q
H4		1.281	1.2	1.175	0.137	0.774	S
H1	Pb	22.21	23	22.494	1.219	-0.233	S
H2		22.66	23.5	23.18	1.916	-0.271	S
H3		1.159	1.1	1.173	0.353	-0.039	S
H4		1.062	1	0.999	0.169	0.37	S
H1	Zn	131.5	110	112.65	7.215	2.613	Q
H2		136.5	115	117.897	7.706	2.414	Q
H3		9.66	8	8.697	1.972	0.488	S
H4		11.63	9.5	10.391	1.482	0.836	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 117, Standortserkundung/Bodenmonitoring Forsten, Graupa (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.52	0.6	0.601	0.052	-1.561	S
H2		0.44	0.55	0.551	0.043	-2.55	Q
H3		0.12	0.08	0.086	0.02	1.7	Q
H4		0.07	0.06	0.061	0.01	0.891	S
H1	Cr	5.11	5	4.969	0.28	0.505	S
H2		8.44	8.4	8.379	0.627	0.097	S
H3		0.85	0.85	0.818	0.124	0.254	S
H4		0.97	0.8	0.814	0.059	2.662	S
H1	Cu	7.64	7.5	7.42	1.007	0.219	S
H2		7.18	7	6.896	0.488	0.583	S
H3		1.14	0.9	0.889	0.148	1.692	Q
H4		2.29	0.9	0.886	0.13	10.796	U
H1	Ni	7.67	8	7.841	0.404	-0.424	S
H2		10.34	10.4	10.364	0.631	-0.037	S
H3		0.52	0.5	0.592	0.175	-0.414	S
H4		1.27	1.2	1.175	0.137	0.693	S
H1	Pb	22.47	23	22.494	1.219	-0.02	S
H2		22.34	23.5	23.18	1.916	-0.438	S
H3		0.98	1.1	1.173	0.353	-0.546	S
H4		1.08	1	0.999	0.169	0.476	S
H1	Zn	111.43	110	112.65	7.215	-0.169	S
H2		115.77	115	117.897	7.706	-0.276	S
H3		8.67	8	8.697	1.972	-0.014	S
H4		11.53	9.5	10.391	1.482	0.768	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 118, Forstliche Versuchs-und Forschungsanstalt (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [*]
H1	As	3.7	5	5.046	0.652	-2.062	Q
H2		4.3	6	5.992	0.547	-3.096	Q
H3		< 1.000	0.3	0.39	0.232		B
H4		< 1.000	0.9	0.939	0.088		B
H1	Cd	0.73	0.6	0.601	0.052	2.478	Q
H2		0.59	0.55	0.551	0.043	0.907	S
H3		0.15	0.08	0.086	0.02	3.192	U
H4		0.15	0.06	0.061	0.01	8.574	U
H1	Cr	4.9	5	4.969	0.28	-0.246	S
H2		8.2	8.4	8.379	0.627	-0.285	S
H3		0.7	0.85	0.818	0.124	-0.954	S
H4		0.6	0.8	0.814	0.059	-3.656	Q
H1	Cu	7.5	7.5	7.42	1.007	0.08	S
H2		6.8	7	6.896	0.488	-0.196	S
H3		0.8	0.9	0.889	0.148	-0.603	S
H4		0.8	0.9	0.886	0.13	-0.662	S
H1	Ni	8	8	7.841	0.404	0.393	S
H2		10.2	10.4	10.364	0.631	-0.259	S
H3		0.7	0.5	0.592	0.175	0.614	Q
H4		1.2	1.2	1.175	0.137	0.182	S
H1	Pb	23.3	23	22.494	1.219	0.661	S
H2		24.7	23.5	23.18	1.916	0.793	S
H3		2.7	1.1	1.173	0.353	4.329	U
H4		2.4	1	0.999	0.169	8.271	U
H1	Zn	104.2	110	112.65	7.215	-1.171	S
H2		106.9	115	117.897	7.706	-1.427	S
H3		8.3	8	8.697	1.972	-0.201	S
H4		11.5	9.5	10.391	1.482	0.748	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

* EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 120, Landwirtschaftliche Untersuchungs- und Forschungsanstalt LUFA (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	5.089	5	5.046	0.652	0.066	S
H2		6.014	6	5.992	0.547	0.041	S
H3		0.289	0.3	0.39	0.232	-0.436	S
H4		0.889	0.9	0.939	0.088	-0.571	S
H1	Cd	0.599	0.6	0.601	0.052	-0.042	S
H2		0.562	0.55	0.551	0.043	0.262	S
H3		0.083	0.08	0.086	0.02	-0.14	S
H4		0.066	0.06	0.061	0.01	0.507	S
H1	Cr	5.155	5	4.969	0.28	0.666	S
H2		8.621	8.4	8.379	0.627	0.386	S
H3		0.863	0.85	0.818	0.124	0.358	S
H4		0.792	0.8	0.814	0.059	-0.378	S
H1	Cu	7.81	7.5	7.42	1.007	0.387	S
H2		7.307	7	6.896	0.488	0.844	S
H3		1.025	0.9	0.889	0.148	0.916	S
H4		1.051	0.9	0.886	0.13	1.268	S
H1	Ni	8.181	8	7.841	0.404	0.841	S
H2		10.714	10.4	10.364	0.631	0.556	S
H3		0.472	0.5	0.592	0.175	-0.688	S
H4		1.186	1.2	1.175	0.137	0.08	S
H1	Pb	23.259	23	22.494	1.219	0.627	S
H2		23.649	23.5	23.18	1.916	0.245	S
H3		1.254	1.1	1.173	0.353	0.23	S
H4		1.08	1	0.999	0.169	0.476	S
H1	Zn	111.79	110	112.65	7.215	-0.119	S
H2		116.85	115	117.897	7.706	-0.136	S
H3		8.564	8	8.697	1.972	-0.067	S
H4		10.206	9.5	10.391	1.482	-0.125	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 121, Landeslabor Schleswig-Holsteinmwelt (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.19	5	5.046	0.652	0.221	S
H2		6.1	6	5.992	0.547	0.198	S
H3		0.23	0.3	0.39	0.232	-0.691	S
H4		0.88	0.9	0.939	0.088	-0.672	S
H1	Cd	0.66	0.6	0.601	0.052	1.132	S
H2		0.6	0.55	0.551	0.043	1.137	S
H3		0.07	0.08	0.086	0.02	-0.786	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5.72	5	4.969	0.28	2.687	S
H2		10.8	8.4	8.379	0.627	3.86	Q
H3		1	0.85	0.818	0.124	1.461	S
H4		0.86	0.8	0.814	0.059	0.783	S
H1	Cu	7.71	7.5	7.42	1.007	0.288	S
H2		7.34	7	6.896	0.488	0.911	S
H3		0.95	0.9	0.889	0.148	0.41	S
H4		0.83	0.9	0.886	0.13	-0.431	S
H1	Ni	8.17	8	7.841	0.404	0.814	S
H2		11.3	10.4	10.364	0.631	1.485	S
H3		0.56	0.5	0.592	0.175	-0.186	S
H4		1.27	1.2	1.175	0.137	0.693	S
H1	Pb	26.9	23	22.494	1.219	3.614	Q
H2		26.5	23.5	23.18	1.916	1.733	S
H3		1.31	1.1	1.173	0.353	0.389	S
H4		1.15	1	0.999	0.169	0.89	S
H1	Zn	120	110	112.65	7.215	1.019	S
H2		128	115	117.897	7.706	1.311	S
H3		8.6	8	8.697	1.972	-0.049	S
H4		11	9.5	10.391	1.482	0.411	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 124, Laboratorium voor Bondemkunde, Gent (Belgium)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	< 15.000	5	5.046	0.652		B
H2		< 15.000	6	5.992	0.547		B
H3		< 15.000	0.3	0.39	0.232		B
H4		< 15.000	0.9	0.939	0.088		B
H1	Cd	< 2.000	0.6	0.601	0.052		B
H2		< 2.000	0.55	0.551	0.043		B
H3		< 2.000	0.08	0.086	0.02		B
H4		< 2.000	0.06	0.061	0.01		B
H1	Cr	5	5	4.969	0.28	0.111	S
H2		8	8.4	8.379	0.627	-0.604	S
H3		< 2.000	0.85	0.818	0.124		B
H4		< 2.000	0.8	0.814	0.059		B
H1	Cu	7.2	7.5	7.42	1.007	-0.218	S
H2		6.6	7	6.896	0.488	-0.606	S
H3		7	0.9	0.889	0.148	41.248	U
H4		< 2.000	0.9	0.886	0.13		B
H1	Ni	7.2	8	7.841	0.404	-1.588	S
H2		10.9	10.4	10.364	0.631	0.851	S
H3		< 2.000	0.5	0.592	0.175		B
H4		< 2.000	1.2	1.175	0.137		B
H1	Pb	22.6	23	22.494	1.219	0.087	S
H2		23.3	23.5	23.18	1.916	0.063	S
H3		< 5.000	1.1	1.173	0.353		B
H4		< 5.000	1	0.999	0.169		B
H1	Zn	107.1	110	112.65	7.215	-0.769	S
H2		111.7	115	117.897	7.706	-0.804	S
H3		8.2	8	8.697	1.972	-0.252	S
H4		8.7	9.5	10.391	1.482	-1.141	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 125, Bayerisches Landesamt f. Umweltschutz, Augsburg (Germany)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.99	5	5.046	0.652	-0.085	S
H2		6.01	6	5.992	0.547	0.033	S
H3		0.307	0.3	0.39	0.232	-0.359	S
H4		0.91	0.9	0.939	0.088	-0.333	S
H1	Cd	0.61	0.6	0.601	0.052	0.17	S
H2		0.565	0.55	0.551	0.043	0.331	S
H3		0.083	0.08	0.086	0.02	-0.155	S
H4		0.064	0.06	0.061	0.01	0.353	S
H1	Cr	5.02	5	4.969	0.28	0.183	S
H2		8.63	8.4	8.379	0.627	0.4	S
H3		0.876	0.85	0.818	0.124	0.463	S
H4		0.835	0.8	0.814	0.059	0.357	S
H1	Cu	7.8	7.5	7.42	1.007	0.378	S
H2		7.37	7	6.896	0.488	0.973	S
H3		0.954	0.9	0.889	0.148	0.437	S
H4		0.961	0.9	0.886	0.13	0.576	S
H1	Ni	8.05	8	7.841	0.404	0.517	S
H2		10.7	10.4	10.364	0.631	0.533	S
H3		0.545	0.5	0.592	0.175	-0.271	S
H4		1.28	1.2	1.175	0.137	0.766	S
H1	Pb	23	23	22.494	1.219	0.415	S
H2		23.6	23.5	23.18	1.916	0.219	S
H3		1.21	1.1	1.173	0.353	0.106	S
H4		1.04	1	0.999	0.169	0.24	S
H1	Zn	120	110	112.65	7.215	1.019	S
H2		129	115	117.897	7.706	1.441	S
H3		9.16	8	8.697	1.972	0.235	S
H4		11.1	9.5	10.391	1.482	0.478	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 129, Ecole Nationale d'ingénieurs de Sfax (Tunisia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	6.725	5	5.046	0.652	2.574	U
H2		6.71	6	5.992	0.547	1.314	S
H3		0.748	0.3	0.39	0.232	1.542	U
H4		1.114	0.9	0.939	0.088	1.976	S
H1	Cd	0.573	0.6	0.601	0.052	-0.542	S
H2		0.516	0.55	0.551	0.043	-0.799	S
H3		0.084	0.08	0.086	0.02	-0.09	S
H4		0.03	0.06	0.061	0.01	-2.951	Q
H1	Cr	4.607	5	4.969	0.28	-1.295	S
H2		8.342	8.4	8.379	0.627	-0.059	S
H3		0.897	0.85	0.818	0.124	0.632	S
H4		0.883	0.8	0.814	0.059	1.176	S
H1	Cu	7.183	7.5	7.42	1.007	-0.235	S
H2		7.479	7	6.896	0.488	1.196	S
H3		1	0.9	0.889	0.148	0.747	S
H4		0.934	0.9	0.886	0.13	0.369	S
H1	Ni	7.138	8	7.841	0.404	-1.742	S
H2		10.297	10.4	10.364	0.631	-0.106	S
H3		0.347	0.5	0.592	0.175	-1.402	Q
H4		1.007	1.2	1.175	0.137	-1.228	Q
H1	Pb	26.925	23	22.494	1.219	3.634	Q
H2		27.832	23.5	23.18	1.916	2.428	Q
H3		1.388	1.1	1.173	0.353	0.61	Q
H4		1.222	1	0.999	0.169	1.315	S
H1	Zn	105.956	110	112.65	7.215	-0.928	S
H2		111.988	115	117.897	7.706	-0.767	S
H3		8.662	8	8.697	1.972	-0.018	S
H4		9.269	9.5	10.391	1.482	-0.757	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 141, Marine Division, Global Environment and Marine Department, Japan Meteorological Agency, Tokyo (Japan)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^α
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.612	0.6	0.601	0.052	0.208	S
H2		0.563	0.55	0.551	0.043	0.285	S
H3		0.079	0.08	0.086	0.02	-0.339	S
H4		0.059	0.06	0.061	0.01	-0.166	S
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	-999	7.5	7.42	1.007		B
H2		-999	7	6.896	0.488		B
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	-999	23	22.494	1.219		B
H2		-999	23.5	23.18	1.916		B
H3		-999	1.1	1.173	0.353		B
H4		-999	1	0.999	0.169		B
H1	Zn	-999	110	112.65	7.215		B
H2		-999	115	117.897	7.706		B
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

α EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenderet / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenderet / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 146, Luxembourg Institute of Science and Technology (LIST) (Luxembourg)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.243	5	5.046	0.652	0.302	S
H2		6.17	6	5.992	0.547	0.326	S
H3		0.385	0.3	0.39	0.232	-0.023	Q
H4		1.001	0.9	0.939	0.088	0.697	S
H1	Cd	0.608	0.6	0.601	0.052	0.131	S
H2		0.561	0.55	0.551	0.043	0.239	S
H3		0.085	0.08	0.086	0.02	-0.04	S
H4		0.063	0.06	0.061	0.01	0.219	S
H1	Cr	4.839	5	4.969	0.28	-0.465	S
H2		7.901	8.4	8.379	0.627	-0.762	S
H3		0.85	0.85	0.818	0.124	0.254	S
H4		0.778	0.8	0.814	0.059	-0.617	S
H1	Cu	7.722	7.5	7.42	1.007	0.3	S
H2		7.119	7	6.896	0.488	0.458	S
H3		0.948	0.9	0.889	0.148	0.396	S
H4		0.909	0.9	0.886	0.13	0.176	S
H1	Ni	8.146	8	7.841	0.404	0.754	S
H2		10.68	10.4	10.364	0.631	0.502	S
H3		0.491	0.5	0.592	0.175	-0.58	S
H4		1.189	1.2	1.175	0.137	0.101	S
H1	Pb	22.92	23	22.494	1.219	0.349	S
H2		23.46	23.5	23.18	1.916	0.146	S
H3		1.116	1.1	1.173	0.353	-0.161	S
H4		1.006	1	0.999	0.169	0.039	S
H1	Zn	120.5	110	112.65	7.215	1.088	S
H2		126.3	115	117.897	7.706	1.09	S
H3		8.703	8	8.697	1.972	0.003	S
H4		10.5	9.5	10.391	1.482	0.073	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 165, Institute of Meteorology and Hydrology, Ha Noi city (Vietnam)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	10.5	5	5.046	0.652	8.359	U
H2		8.16	6	5.992	0.547	3.967	U
H3		0.74	0.3	0.39	0.232	1.507	U
H4		1.22	0.9	0.939	0.088	3.176	Q
H1	Cd	0.75	0.6	0.601	0.052	2.863	Q
H2		0.63	0.55	0.551	0.043	1.829	S
H3		0.08	0.08	0.086	0.02	-0.289	S
H4		0.11	0.06	0.061	0.01	4.732	U
H1	Cr	8.2	5	4.969	0.28	11.56	U
H2		6.8	8.4	8.379	0.627	-2.517	Q
H3		0.64	0.85	0.818	0.124	-1.437	S
H4		0.85	0.8	0.814	0.059	0.613	S
H1	Cu	19.8	7.5	7.42	1.007	12.297	U
H2		10.4	7	6.896	0.488	7.185	U
H3		0.93	0.9	0.889	0.148	0.275	S
H4		1.15	0.9	0.886	0.13	2.03	Q
H1	Ni	10.2	8	7.841	0.404	5.84	Q
H2		8.1	10.4	10.364	0.631	-3.589	Q
H3		0.85	0.5	0.592	0.175	1.471	U
H4		1.06	1.2	1.175	0.137	-0.841	S
H1	Pb	16.8	23	22.494	1.219	-4.67	Q
H2		18.2	23.5	23.18	1.916	-2.598	Q
H3		0.93	1.1	1.173	0.353	-0.688	S
H4		1.22	1	0.999	0.169	1.303	S
H1	Zn	142	110	112.65	7.215	4.068	Q
H2		123	115	117.897	7.706	0.662	S
H3		10.1	8	8.697	1.972	0.711	Q
H4		14.2	9.5	10.391	1.482	2.57	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 166, Forest Research Institute, Laboratory of Forest Environment Chemistry (Poland)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.61	0.6	0.601	0.052	0.17	S
H2		0.56	0.55	0.551	0.043	0.216	S
H3		< 0.500	0.08	0.086	0.02		B
H4		< 0.500	0.06	0.061	0.01		B
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	< 9.000	7.5	7.42	1.007		B
H2		< 9.000	7	6.896	0.488		B
H3		< 9.000	0.9	0.889	0.148		B
H4		< 9.000	0.9	0.886	0.13		B
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	23.17	23	22.494	1.219	0.554	S
H2		23.81	23.5	23.18	1.916	0.329	S
H3		< 10.000	1.1	1.173	0.353		B
H4		< 10.000	1	0.999	0.169		B
H1	Zn	109.88	110	112.65	7.215	-0.384	S
H2		113.91	115	117.897	7.706	-0.517	S
H3		8.34	8	8.697	1.972	-0.181	S
H4		9.89	9.5	10.391	1.482	-0.338	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 169, Lancaster Environment Centre, Centre for Ecology and Hydrology (United Kingdom)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	4.71	5	5.046	0.652	-0.514	S
H2		5.365	6	5.992	0.547	-1.147	S
H3		0.29	0.3	0.39	0.232	-0.432	S
H4		0.85	0.9	0.939	0.088	-1.012	S
H1	Cd	0.594	0.6	0.601	0.052	-0.138	S
H2		0.519	0.55	0.551	0.043	-0.729	S
H3		0.079	0.08	0.086	0.02	-0.339	S
H4		0.059	0.06	0.061	0.01	-0.166	S
H1	Cr	4.663	5	4.969	0.28	-1.094	S
H2		7.42	8.4	8.379	0.627	-1.529	S
H3		0.876	0.85	0.818	0.124	0.463	S
H4		0.789	0.8	0.814	0.059	-0.429	S
H1	Cu	7.13	7.5	7.42	1.007	-0.288	S
H2		6.4	7	6.896	0.488	-1.016	S
H3		0.881	0.9	0.889	0.148	-0.056	S
H4		0.867	0.9	0.886	0.13	-0.147	S
H1	Ni	7.95	8	7.841	0.404	0.269	S
H2		9.875	10.4	10.364	0.631	-0.775	S
H3		0.541	0.5	0.592	0.175	-0.294	S
H4		1.19	1.2	1.175	0.137	0.109	S
H1	Pb	22.467	23	22.494	1.219	-0.022	S
H2		22.1	23.5	23.18	1.916	-0.563	S
H3		1.107	1.1	1.173	0.353	-0.186	S
H4		0.999	1	0.999	0.169	-0.002	S
H1	Zn	106	110	112.65	7.215	-0.922	S
H2		107	115	117.897	7.706	-1.414	S
H3		8.177	8	8.697	1.972	-0.264	S
H4		9.97	9.5	10.391	1.482	-0.284	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 171, Ecole de Mines de Douai, Department Chimie et Environnement (France)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	6.042	5	5.046	0.652	1.527	Q
H2		7.157	6	5.992	0.547	2.132	Q
H3		0.357	0.3	0.39	0.232	-0.143	S
H4		1.082	0.9	0.939	0.088	1.614	S
H1	Cd	0.698	0.6	0.601	0.052	1.863	Q
H2		0.637	0.55	0.551	0.043	1.99	Q
H3		0.093	0.08	0.086	0.02	0.357	S
H4		0.069	0.06	0.061	0.01	0.795	S
H1	Cr	4.999	5	4.969	0.28	0.108	S
H2		8.407	8.4	8.379	0.627	0.045	S
H3		0.88	0.85	0.818	0.124	0.495	S
H4		0.83	0.8	0.814	0.059	0.271	S
H1	Cu	7.662	7.5	7.42	1.007	0.24	S
H2		7.256	7	6.896	0.488	0.739	S
H3		0.973	0.9	0.889	0.148	0.565	S
H4		0.943	0.9	0.886	0.13	0.438	S
H1	Ni	8.261	8	7.841	0.404	1.039	S
H2		10.861	10.4	10.364	0.631	0.789	S
H3		0.552	0.5	0.592	0.175	-0.231	S
H4		1.278	1.2	1.175	0.137	0.752	S
H1	Pb	22.998	23	22.494	1.219	0.413	S
H2		23.75	23.5	23.18	1.916	0.298	S
H3		1.217	1.1	1.173	0.353	0.126	S
H4		1.032	1	0.999	0.169	0.193	S
H1	Zn	152.102	110	112.65	7.215	5.468	U
H2		159.873	115	117.897	7.706	5.447	U
H3		11.538	8	8.697	1.972	1.44	Q
H4		13.55	9.5	10.391	1.482	2.131	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 174, Background Monitoring Department, Institute of Global Climate and Ecology (IGCE), Moscow (Russian Federation)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^α
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.5	0.6	0.601	0.052	-1.946	Q
H2		0.47	0.55	0.551	0.043	-1.859	S
H3		0.055	0.08	0.086	0.02	-1.532	Q
H4		0.063	0.06	0.061	0.01	0.219	S
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	4.15	7.5	7.42	1.007	-3.248	U
H2		3.7	7	6.896	0.488	-6.552	U
H3		0.98	0.9	0.889	0.148	0.612	S
H4		0.63	0.9	0.886	0.13	-1.969	Q
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	19.46	23	22.494	1.219	-2.488	Q
H2		19.57	23.5	23.18	1.916	-1.884	Q
H3		0.92	1.1	1.173	0.353	-0.716	S
H4		1.098	1	0.999	0.169	0.583	S
H1	Zn	-999	110	112.65	7.215		B
H2		-999	115	117.897	7.706		B
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^α EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenderet / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenderet / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 178, Environmental Chemistry and EANET Monitoring Laboratory, Limnological Institute RAS/SB, Irkutsk (Russian Federation)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	6.38	5	5.046	0.652	2.045	Q
H2		0.38	6	5.992	0.547	-10.268	U
H3		4.05	0.3	0.39	0.232	15.771	U
H4		1.12	0.9	0.939	0.088	2.044	S
H1	Cd	0.7	0.6	0.601	0.052	1.901	Q
H2		0.07	0.55	0.551	0.043	-11.078	U
H3		0.35	0.08	0.086	0.02	13.137	U
H4		0.04	0.06	0.061	0.01	-1.99	Q
H1	Cr	4.92	5	4.969	0.28	-0.175	S
H2		0.86	8.4	8.379	0.627	-11.987	U
H3		4.65	0.85	0.818	0.124	30.844	U
H4		0.81	0.8	0.814	0.059	-0.07	S
H1	Cu	7.57	7.5	7.42	1.007	0.149	S
H2		0.9	7	6.896	0.488	-12.292	U
H3		4.07	0.9	0.889	0.148	21.47	U
H4		0.89	0.9	0.886	0.13	0.03	S
H1	Ni	7.99	8	7.841	0.404	0.368	S
H2		0.5	10.4	10.364	0.631	-15.641	U
H3		5.66	0.5	0.592	0.175	28.949	U
H4		1.22	1.2	1.175	0.137	0.328	S
H1	Pb	22.7	23	22.494	1.219	0.169	S
H2		1.18	23.5	23.18	1.916	-11.479	U
H3		12.01	1.1	1.173	0.353	30.72	U
H4		0.99	1	0.999	0.169	-0.055	S
H1	Zn	109.2	110	112.65	7.215	-0.478	S
H2		9.13	115	117.897	7.706	-14.115	U
H3		61.43	8	8.697	1.972	26.736	U
H4		9.66	9.5	10.391	1.482	-0.493	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenderet / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenderet / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 179, Murmansk Environmental Monitoring Center, Murmansk (Russian Federation)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.56	5	5.046	0.652	-0.744	S
H2		5.72	6	5.992	0.547	-0.497	S
H3		0.242	0.3	0.39	0.232	-0.639	S
H4		0.65	0.9	0.939	0.088	-3.275	Q
H1	Cd	0.8	0.6	0.601	0.052	3.825	U
H2		0.74	0.55	0.551	0.043	4.364	U
H3		0.11	0.08	0.086	0.02	1.203	Q
H4		0.08	0.06	0.061	0.01	1.851	Q
H1	Cr	4.92	5	4.969	0.28	-0.175	S
H2		8.08	8.4	8.379	0.627	-0.476	S
H3		0.77	0.85	0.818	0.124	-0.39	S
H4		0.71	0.8	0.814	0.059	-1.778	S
H1	Cu	8.28	7.5	7.42	1.007	0.854	S
H2		6.75	7	6.896	0.488	-0.298	S
H3		0.76	0.9	0.889	0.148	-0.873	S
H4		0.92	0.9	0.886	0.13	0.261	S
H1	Ni	8.39	8	7.841	0.404	1.358	S
H2		10.52	10.4	10.364	0.631	0.248	S
H3		0.66	0.5	0.592	0.175	0.386	Q
H4		1.26	1.2	1.175	0.137	0.62	S
H1	Pb	19.9	23	22.494	1.219	-2.127	S
H2		20.6	23.5	23.18	1.916	-1.346	S
H3		1.59	1.1	1.173	0.353	1.183	Q
H4		1.26	1	0.999	0.169	1.539	Q
H1	Zn	110.89	110	112.65	7.215	-0.244	S
H2		112.65	115	117.897	7.706	-0.681	S
H3		7.8	8	8.697	1.972	-0.455	S
H4		9.1	9.5	10.391	1.482	-0.871	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 181, TNO innovation for life (The Netherlands)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [*]
H1	As	5.21	5	5.046	0.652	0.252	S
H2		6.14	6	5.992	0.547	0.271	S
H3		0.33	0.3	0.39	0.232	-0.26	S
H4		0.91	0.9	0.939	0.088	-0.333	S
H1	Cd	0.59	0.6	0.601	0.052	-0.215	S
H2		0.57	0.55	0.551	0.043	0.446	S
H3		0.09	0.08	0.086	0.02	0.208	S
H4		0.07	0.06	0.061	0.01	0.891	S
H1	Cr	4.9	5	4.969	0.28	-0.246	S
H2		8.4	8.4	8.379	0.627	0.034	S
H3		0.9	0.85	0.818	0.124	0.656	S
H4		0.8	0.8	0.814	0.059	-0.241	S
H1	Cu	7.5	7.5	7.42	1.007	0.08	S
H2		7	7	6.896	0.488	0.214	S
H3		0.9	0.9	0.889	0.148	0.072	S
H4		0.9	0.9	0.886	0.13	0.107	S
H1	Ni	8	8	7.841	0.404	0.393	S
H2		11	10.4	10.364	0.631	1.009	S
H3		0.5	0.5	0.592	0.175	-0.528	S
H4		1.3	1.2	1.175	0.137	0.913	S
H1	Pb	23	23	22.494	1.219	0.415	S
H2		23.5	23.5	23.18	1.916	0.167	S
H3		1.3	1.1	1.173	0.353	0.361	S
H4		1	1	0.999	0.169	0.004	S
H1	Zn	113	110	112.65	7.215	0.049	S
H2		118	115	117.897	7.706	0.013	S
H3		10	8	8.697	1.972	0.661	S
H4		11	9.5	10.391	1.482	0.411	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

* EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 184, Institute for Public Health Pozarevac (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.65	5	5.046	0.652	-0.606	S
H2		5.75	6	5.992	0.547	-0.442	S
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.573	0.6	0.601	0.052	-0.542	S
H2		0.512	0.55	0.551	0.043	-0.891	S
H3		-999	0.08	0.086	0.02		B
H4		-999	0.06	0.061	0.01		B
H1	Cr	5.16	5	4.969	0.28	0.684	S
H2		8.64	8.4	8.379	0.627	0.416	S
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	-999	7.5	7.42	1.007		B
H2		-999	7	6.896	0.488		B
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	7.97	8	7.841	0.404	0.318	S
H2		10.1	10.4	10.364	0.631	-0.418	S
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	22.8	23	22.494	1.219	0.251	S
H2		23.6	23.5	23.18	1.916	0.219	S
H3		-999	1.1	1.173	0.353		B
H4		-999	1	0.999	0.169		B
H1	Zn	110	110	112.65	7.215	-0.367	S
H2		115	115	117.897	7.706	-0.376	S
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 185, Public Health Centre - Cacak, Department for Sanitary Chemistry and Ecotoxicology (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^α
H1	As	4	5	5.046	0.652	-1.603	Q
H2		5.6	6	5.992	0.547	-0.717	S
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.56	0.6	0.601	0.052	-0.792	S
H2		0.51	0.55	0.551	0.043	-0.937	S
H3		-999	0.08	0.086	0.02		B
H4		-999	0.06	0.061	0.01		B
H1	Cr	5.5	5	4.969	0.28	1.9	S
H2		8.4	8.4	8.379	0.627	0.034	S
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	7.5	7.5	7.42	1.007	0.08	S
H2		6.8	7	6.896	0.488	-0.196	S
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	8	8	7.841	0.404	0.393	S
H2		10	10.4	10.364	0.631	-0.577	S
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	21.3	23	22.494	1.219	-0.979	S
H2		23.3	23.5	23.18	1.916	0.063	S
H3		-999	1.1	1.173	0.353		B
H4		-999	1	0.999	0.169		B
H1	Zn	110	110	112.65	7.215	-0.367	S
H2		115	115	117.897	7.706	-0.376	S
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

α EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect: <http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framserveret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framserveret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 186, Public Health Institute - Kralevo (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	3.69	5	5.046	0.652	-2.078	Q
H2		5.78	6	5.992	0.547	-0.388	S
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.58	0.6	0.601	0.052	-0.407	S
H2		0.51	0.55	0.551	0.043	-0.937	S
H3		-999	0.08	0.086	0.02		B
H4		-999	0.06	0.061	0.01		B
H1	Cr	5.35	5	4.969	0.28	1.364	S
H2		8.56	8.4	8.379	0.627	0.289	S
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	7.9	7.5	7.42	1.007	0.477	S
H2		6.3	7	6.896	0.488	-1.221	S
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	7.86	8	7.841	0.404	0.046	S
H2		10.19	10.4	10.364	0.631	-0.275	S
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	21.87	23	22.494	1.219	-0.512	S
H2		22.75	23.5	23.18	1.916	-0.224	S
H3		-999	1.1	1.173	0.353		B
H4		-999	1	0.999	0.169		B
H1	Zn	115.4	110	112.65	7.215	0.381	S
H2		116.1	115	117.897	7.706	-0.233	S
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 187, Public Health Institute - Nis, Department for Sanitary Chemistry (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4	5	5.046	0.652	-1.603	Q
H2		5.5	6	5.992	0.547	-0.9	S
H3		0.5	0.3	0.39	0.232	0.473	U
H4		0.9	0.9	0.939	0.088	-0.446	S
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.5	0.55	0.551	0.043	-1.167	S
H3		0.06	0.08	0.086	0.02	-1.283	Q
H4		0.07	0.06	0.061	0.01	0.891	S
H1	Cr	5.2	5	4.969	0.28	0.827	S
H2		8.5	8.4	8.379	0.627	0.193	S
H3		0.9	0.85	0.818	0.124	0.656	S
H4		0.6	0.8	0.814	0.059	-3.656	Q
H1	Cu	6	7.5	7.42	1.007	-1.41	Q
H2		5	7	6.896	0.488	-3.886	Q
H3		0.8	0.9	0.889	0.148	-0.603	S
H4		0.7	0.9	0.886	0.13	-1.431	S
H1	Ni	7	8	7.841	0.404	-2.084	S
H2		1	10.4	10.364	0.631	-14.848	U
H3		0.98	0.5	0.592	0.175	2.214	U
H4		1.3	1.2	1.175	0.137	0.913	S
H1	Pb	22	23	22.494	1.219	-0.405	S
H2		20	23.5	23.18	1.916	-1.659	S
H3		1.9	1.1	1.173	0.353	2.062	U
H4		1.3	1	0.999	0.169	1.775	Q
H1	Zn	110	110	112.65	7.215	-0.367	S
H2		115	115	117.897	7.706	-0.376	S
H3		8	8	8.697	1.972	-0.353	S
H4		10	9.5	10.391	1.482	-0.264	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

**Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001**

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 189, Institute of Public Health - Kikinda (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.2	5	5.046	0.652	-1.296	Q
H2		5.1	6	5.992	0.547	-1.632	Q
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	0.52	0.6	0.601	0.052	-1.561	S
H2		0.49	0.55	0.551	0.043	-1.398	S
H3		-999	0.08	0.086	0.02		B
H4		-999	0.06	0.061	0.01		B
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	-999	7.5	7.42	1.007		B
H2		-999	7	6.896	0.488		B
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	22.3	23	22.494	1.219	-0.159	S
H2		22.8	23.5	23.18	1.916	-0.198	S
H3		-999	1.1	1.173	0.353		B
H4		-999	1	0.999	0.169		B
H1	Zn	108	110	112.65	7.215	-0.644	S
H2		112	115	117.897	7.706	-0.765	S
H3		-999	8	8.697	1.972		B
H4		-999	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 191, Institute for Public Health - Pancevo (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	6.3	5	5.046	0.652	1.922	Q
H2		6.8	6	5.992	0.547	1.479	S
H3		< 1.000	0.3	0.39	0.232		B
H4		< 1.000	0.9	0.939	0.088		B
H1	Cd	0.6	0.6	0.601	0.052	-0.022	S
H2		0.49	0.55	0.551	0.043	-1.398	S
H3		< 0.200	0.08	0.086	0.02		B
H4		< 0.200	0.06	0.061	0.01		B
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	-999	7.5	7.42	1.007		B
H2		-999	7	6.896	0.488		B
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	24.8	23	22.494	1.219	1.891	S
H2		25.6	23.5	23.18	1.916	1.263	S
H3		< 2.000	1.1	1.173	0.353		B
H4		< 2.000	1	0.999	0.169		B
H1	Zn	121.5	110	112.65	7.215	1.227	S
H2		131.1	115	117.897	7.706	1.713	S
H3		14.5	8	8.697	1.972	2.942	U
H4		13.2	9.5	10.391	1.482	1.895	Q

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 193, Institute of Public Health of Vojvodina (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.72	5	5.046	0.652	-0.499	S
H2		5.89	6	5.992	0.547	-0.186	S
H3		0.31	0.3	0.39	0.232	-0.346	S
H4		0.87	0.9	0.939	0.088	-0.786	S
H1	Cd	0.63	0.6	0.601	0.052	0.555	S
H2		0.57	0.55	0.551	0.043	0.446	S
H3		0.08	0.08	0.086	0.02	-0.289	S
H4		0.06	0.06	0.061	0.01	-0.07	S
H1	Cr	5.08	5	4.969	0.28	0.398	S
H2		8.55	8.4	8.379	0.627	0.273	S
H3		0.87	0.85	0.818	0.124	0.415	S
H4		0.8	0.8	0.814	0.059	-0.241	S
H1	Cu	6.89	7.5	7.42	1.007	-0.526	S
H2		7.56	7	6.896	0.488	1.362	S
H3		0.96	0.9	0.889	0.148	0.477	S
H4		0.92	0.9	0.886	0.13	0.261	S
H1	Ni	8	8	7.841	0.404	0.393	S
H2		10.32	10.4	10.364	0.631	-0.069	S
H3		0.58	0.5	0.592	0.175	-0.071	S
H4		1.2	1.2	1.175	0.137	0.182	S
H1	Pb	21.87	23	22.494	1.219	-0.512	S
H2		22.3	23.5	23.18	1.916	-0.459	S
H3		0.88	1.1	1.173	0.353	-0.83	S
H4		0.8	1	0.999	0.169	-1.177	S
H1	Zn	111.16	110	112.65	7.215	-0.206	S
H2		115.97	115	117.897	7.706	-0.25	S
H3		8.31	8	8.697	1.972	-0.196	S
H4		10.06	9.5	10.391	1.482	-0.223	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 194, Institute of Public Health - Zrenjanin (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	5.3	5	5.046	0.652	0.39	S
H2		6.1	6	5.992	0.547	0.198	S
H3		< 5.000	0.3	0.39	0.232		B
H4		< 5.000	0.9	0.939	0.088		B
H1	Cd	0.62	0.6	0.601	0.052	0.362	S
H2		0.56	0.55	0.551	0.043	0.216	S
H3		< 0.500	0.08	0.086	0.02		B
H4		< 0.500	0.06	0.061	0.01		B
H1	Cr	5	5	4.969	0.28	0.111	S
H2		8.4	8.4	8.379	0.627	0.034	S
H3		0.81	0.85	0.818	0.124	-0.068	S
H4		0.74	0.8	0.814	0.059	-1.266	S
H1	Cu	7.3	7.5	7.42	1.007	-0.119	S
H2		6.7	7	6.896	0.488	-0.401	S
H3		< 5.000	0.9	0.889	0.148		B
H4		< 5.000	0.9	0.886	0.13		B
H1	Ni	7.8	8	7.841	0.404	-0.103	S
H2		10.4	10.4	10.364	0.631	0.058	S
H3		< 5.000	0.5	0.592	0.175		B
H4		< 5.000	1.2	1.175	0.137		B
H1	Pb	22.4	23	22.494	1.219	-0.077	S
H2		23.4	23.5	23.18	1.916	0.115	S
H3		< 1.000	1.1	1.173	0.353	-1.907	U
H4		< 1.000	1	0.999	0.169	-2.948	Q
H1	Zn	103.4	110	112.65	7.215	-1.282	S
H2		108.1	115	117.897	7.706	-1.271	S
H3		7	8	8.697	1.972	-0.86	S
H4		8.1	9.5	10.391	1.482	-1.546	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 195, Institute of Public Health - Suobtica (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm [⌘]
H1	As	4.96	5	5.046	0.652	-0.131	S
H2		5.95	6	5.992	0.547	-0.076	S
H3		< 1.390	0.3	0.39	0.232		B
H4		< 1.390	0.9	0.939	0.088		B
H1	Cd	0.49	0.6	0.601	0.052	-2.138	Q
H2		< 0.480	0.55	0.551	0.043	-7.16	U
H3		< 0.480	0.08	0.086	0.02		B
H4		< 0.480	0.06	0.061	0.01		B
H1	Cr	4.35	5	4.969	0.28	-2.214	S
H2		7.43	8.4	8.379	0.627	-1.513	S
H3		< 0.850	0.85	0.818	0.124	-3.168	Q
H4		< 0.820	0.8	0.814	0.059		B
H1	Cu	4.04	7.5	7.42	1.007	-3.357	U
H2		3.38	7	6.896	0.488	-7.208	U
H3		< 0.650	0.9	0.889	0.148	-3.809	U
H4		< 0.650	0.9	0.886	0.13	-4.315	U
H1	Ni	7.16	8	7.841	0.404	-1.687	S
H2		9.25	10.4	10.364	0.631	-1.766	S
H3		0.88	0.5	0.592	0.175	1.642	U
H4		1.46	1.2	1.175	0.137	2.082	Q
H1	Pb	21.62	23	22.494	1.219	-0.717	S
H2		21.64	23.5	23.18	1.916	-0.803	S
H3		1.53	1.1	1.173	0.353	1.013	Q
H4		< 1.460	1	0.999	0.169		B
H1	Zn	106.4	110	112.65	7.215	-0.866	S
H2		111.3	115	117.897	7.706	-0.856	S
H3		6.72	8	8.697	1.972	-1.002	S
H4		7.72	9.5	10.391	1.482	-1.802	S

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

⌘ EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.

EMEP – Analytical intercomparison of heavy metals in precipitation 2014

Laboratory 198, Institute for public health - Sremska Mitrovica (Republic of Serbia)

Heavy metals in precipitation (H-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^a
H1	As	-999	5	5.046	0.652		B
H2		-999	6	5.992	0.547		B
H3		-999	0.3	0.39	0.232		B
H4		-999	0.9	0.939	0.088		B
H1	Cd	-999	0.6	0.601	0.052		B
H2		-999	0.55	0.551	0.043		B
H3		-999	0.08	0.086	0.02		B
H4		-999	0.06	0.061	0.01		B
H1	Cr	-999	5	4.969	0.28		B
H2		-999	8.4	8.379	0.627		B
H3		-999	0.85	0.818	0.124		B
H4		-999	0.8	0.814	0.059		B
H1	Cu	-999	7.5	7.42	1.007		B
H2		-999	7	6.896	0.488		B
H3		-999	0.9	0.889	0.148		B
H4		-999	0.9	0.886	0.13		B
H1	Ni	-999	8	7.841	0.404		B
H2		-999	10.4	10.364	0.631		B
H3		-999	0.5	0.592	0.175		B
H4		-999	1.2	1.175	0.137		B
H1	Pb	-999	23	22.494	1.219		B
H2		-999	23.5	23.18	1.916		B
H3		-999	1.1	1.173	0.353		B
H4		-999	1	0.999	0.169		B
H1	Zn	103.58	110	112.65	7.215	-1.257	S
H2		107.6	115	117.897	7.706	-1.336	S
H3		< 22.000	8	8.697	1.972		B
H4		< 22.000	9.5	10.391	1.482		B

If your laboratory reported values as less than the detection limit, and your detection limit equal or is lower than the expected value, ½ DL is taken as the reported value in further calculations.

^a EMEP quality norm; the letters in the column indicates:

- S – Satisfactory: Your result deviates less than ±25% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- Q – Questionable: Your result deviates between ±25-50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- U – Unsatisfactory: Your result deviates more than ±50% of the expected value for samples H2 and H4, and less than ±15% for samples H1 and H3
- B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect:
<http://www.nilu.no/projects/ccc/intercomparison.html>

Deltaker i CIENS og Framsenteret / Associated with CIENS and the Fram Centre
ISO-sertifisert etter / ISO certified according to NS-EN ISO 9001/ISO 14001

NILU – Norsk institutt for luftforskning
PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

Vennligst adresser post til NILU, ikke til enkeltpersoner/Please reply to the institute.